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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/200,523	11/25/1998	SYED AON MUJTABA		4927

7590 09/11/2003

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EXAMINER

ELALLAM, AHMED

ART UNIT	PAPER NUMBER
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2662

DATE MAILED: 09/11/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/200,523

Applicant(s)

MUJTABA, SYED AON

Examiner

AHMED ELALLAM

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

This communication is responsive to CPA filed on June 30, 2003.

Claim Rejections - 35 USC § 102

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 1-3, 4, 6-10, 11, 13-18, 20, and 21 are rejected under 35 U.S.C. 102(e) as being anticipated by Alamouti et al, US (5,933,421).

Regarding claims 1, 8 and 15, with reference to figure1, Alamouti discloses a wireless cellular communication system in which a plurality of remote stations (U, V) communicate with a base station Z, the base station receiving a first incoming wireless signal comprising a plurality of first discrete frequency tones that are orthogonal frequency division multiplexed (OFDM) in a first frequency band from a first remote station (U), and a second incoming wireless signal comprising a plurality of second discrete frequency tones that are orthogonal frequency division multiplexed (OFDM) in a the first frequency band from a second remote station (V), and that the first and second remote stations have different sets of discrete frequency tones. See column 5, lines 21-67. In addition, Alamouti discloses that the base station transmit a first wireless outgoing signal 18 comprising a plurality of third discrete frequency tones FI that are orthogonal frequency division multiplexed (OFDM) in a second frequency band to the first remote

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station (U), and that the first remote station and base station use different sets of discrete frequency tones (F_2 , F_1), see column 9, lines 66-67 and column 10, lines 1-13. (Corresponding to claimed communicating between a plurality of subscriber units of the system and a base station in a cell of the system over at least one of an uplink and a downlink; and separating communications on the uplink and downlink using orthogonal frequency division multiplexing).

Regarding claims 3, 10 and 17, Alamouti discloses that the first and second wireless signals from the remote units (U, V) to the base station Z, and the third wireless signal from the base station Z to the first remote unit (U) are transmitted in different TDMA intervals, see column 9, lines 19-67, and column 10, lines 1-13. (Corresponding to using Time Division Multiple Access for separating communication between a subset of the subscriber units).

Regarding claims 4, 11 and 18, with reference to figure 1.1, Alamouti discloses that the total signal frequency band is divided into N frequency orthogonal sub-channels, see column 3, lines 7-24, and that the total bandwidth of the airlink (uplink and downlink) is divided into a lower band and upper band. See column 13, lines 9-20. (Corresponding to claimed assigning a first subset of M orthogonal frequency division multiplexed carriers to the uplink and a second subset of the M carriers to downlink).

Regarding claims 6, 13 and 20, with reference to figure 1.7, Alamouti discloses an inverse Fourier transform operation at the base station.

Regarding claims 7, 14 and 21, with reference to figure 1.10, Alamouti discloses an Fourier transform operation at base station receiver system to recover multiplexed orthogonal frequency division multiplexed carrier.

Regarding claims 2, 9 and 16, Alamouti discloses that the wireless unit can be fixed. See column 8, lines 20-28.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 5, 12, 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Alamouti in view of Frodigh et al, US (5,726,978).

Regarding claim^{12, 19} 5, Alamouti discloses substantially all the limitations of claim^{12, 19} 5, except it doesn't explicitly disclose that the number of carriers in uplink and downlink sets is varies across the time slots in accordance with uplink and down link demand.

However, Frodigh, with reference to figures 2 and 7, discloses an adaptive channel allocation method in an OFDMA system in which each up/down link capacities between a mobile and a base station are allocated based on bandwidth requests see column 7, lines 39-50 and column 13, lines 23-46.

Therefore, it would have been obvious to an ordinary person of skill in the art at the time the invention was made to provide Frodigh's adaptive channel allocation

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(OFDM allocations) with the OFDMA/timeslots allocation of Alamouti so to increase the capacity of the system.

Response to Arguments

4. Applicant's arguments with respect to claims 1-21 have been considered but are moot in view of the new ground(s) of rejection.


Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to AHMED ELALLAM whose telephone number is (703) 308-6069. The examiner can normally be reached on 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kizou Hassan can be reached on (703) 305-4744. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.

AHMED ELALLAM
Examiner
Art Unit 2662
September 5, 2003


JOHN PEZZLO
PRIMARY EXAMINER